

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1 and 2 (canceled).

3. (currently amended): A method for forming a thermoplastic resin foam comprising the steps of:

plasticizing a thermoplastic resin material by rotatably driving a screw provided drivably in a direction of plasticization and injection inside a screw cylinder,

injecting melted resin, permeated by an inert gas, into a mold by driving said screw in the direction of injection after having injected the inert gas such as a carbon dioxide or a nitrogen gas having, at least in pressure, a pressure equal to or greater than a supercritical pressure or the inert gas under a supercritical state into said screw cylinder to allow the inert gas to permeate melted resin,

wherein an electric servomotor is used as a drive means for driving said screw in the direction of plasticization and injection,

wherein the step of plasticizing the thermoplastic resin material is performed until immediately before the step of injecting the melted resin is initiated,

wherein a controller is provided with a setting device which includes pressure at a pre-set value for the screw cylinder, and when a pressure has dropped below the pre-set value inside said

screw cylinder, the controller causes the electroservomotor to drive said screw in the direction of plasticization and to stop said screw when the pressure becomes equal to or greater than the pre-set value in order to maintain the pressure at a supercritical pressure or more inside said screw cylinder.

4. (original): A method for forming a thermoplastic resin foam as claimed in claim 3, wherein after the step of plasticizing the thermoplastic resin material has been completed, said screw is prevented from retreating by applying brake to said electric servomotor to maintain a pressure at a supercritical pressure or more inside said screw cylinder.

Claim 5 (canceled).

6. (currently amended): ~~A method for forming a thermoplastic resin foam as claimed in claim 3,~~ A method for forming a thermoplastic resin foam comprising the steps of:

plasticizing a thermoplastic resin material by rotatably driving a screw provided drivably in a direction of plasticization and injection inside a screw cylinder,

injecting melted resin, permeated by an inert gas, into a mold by driving said screw in the direction of injection after having injected the inert gas such as a carbon dioxide or a nitrogen gas having, at least in pressure, a pressure equal to or greater than a supercritical pressure or the inert gas under a supercritical state into said screw cylinder to allow the inert gas to permeate melted resin,

wherein an electric servomotor is used as a drive means for driving said screw in the direction of plasticization and injection,

wherein even after the step of plasticizing the thermoplastic resin material has been completed, said screw is driven at low speeds in the direction of plasticization until immediately before the step of injecting the melted resin is initiated.

7. (canceled).

8. (currently amended): ~~A method for forming a thermoplastic resin foam as claimed in claim 3,~~ A method for forming a thermoplastic resin foam comprising the steps of:

plasticizing a thermoplastic resin material by rotatably driving a screw provided drivably in a direction of plasticization and injection inside a screw cylinder,

injecting melted resin, permeated by an inert gas, into a mold by driving said screw in the direction of injection after having injected the inert gas such as a carbon dioxide or a nitrogen gas having, at least in pressure, a pressure equal to or greater than a supercritical pressure or the inert gas under a supercritical state into said screw cylinder to allow the inert gas to permeate melted resin,

wherein an electric servomotor is used as a drive means for driving said screw in the direction of plasticization and injection,

wherein the step of plasticizing the thermoplastic resin material is performed until immediately before the step of injecting the melted resin is initiated,

wherein when said screw is driven in the direction of plasticization, driving said screw in the opposite direction of plasticization is intermittently combined therewith.

9. (original): A method for forming a thermoplastic resin foam as claimed in claim 3, wherein during plasticization, said screw cylinder is provided with micro-vibration in the direction of injection.

10. (currently amended): A method for forming a thermoplastic resin foam according to claim 3, wherein said screw corresponds to said screw cylinder and is selected as a first metered portion, a low-pressure portion, and second metered portion, ~~in that~~ order from a rear end portion to a top end portion of said screw; and further comprising:

an inert gas having, at least in pressure, a pressure equal to or greater than a supercritical pressure or an inert gas under a supercritical state is injected into a position corresponding to the low-pressure portion of said screw of said screw cylinder.

11. (currently amended): A method for forming a thermoplastic resin foam according to claim 4, wherein said screw corresponds to said screw cylinder and is selected as a first metered portion, a low-pressure portion, and second metered portion, ~~in that~~ order from a rear end portion to a top end portion of said screw; and further comprising:

an inert gas having, at least in pressure, a pressure equal to or greater than a supercritical pressure or an inert gas under a supercritical state is injected into a position corresponding to the low-pressure portion of said screw of said screw cylinder.

Claim 12 (canceled).

13. (currently amended): A method for forming a thermoplastic resin foam according to claim 6, wherein said screw corresponds to said screw cylinder and is selected as a first metered portion, a low-pressure portion, and second metered portion, in ~~that~~ order from a rear end portion to a top end portion of said screw; and further comprising:

an inert gas having, at least in pressure, a pressure equal to or greater than a supercritical pressure or an inert gas under a supercritical state is injected into a position corresponding to the low-pressure portion of said screw of said screw cylinder.

14. (canceled).

15. (currently amended): A method for forming a thermoplastic resin foam according to claim 8, wherein said screw corresponds to said screw cylinder and is selected as a first metered portion, a low-pressure portion, and second metered portion, in ~~that~~ order from a rear end portion to a top end portion of said screw; and further comprising:

an inert gas having, at least in pressure, a pressure equal to or greater than a supercritical pressure or an inert gas under a supercritical state is injected into a position corresponding to the low-pressure portion of said screw of said screw cylinder.

16. (currently amended): A method for forming a thermoplastic resin foam according to claim 9, wherein said screw corresponds to said screw cylinder and is selected as a first metered portion, a low-pressure portion, and second metered portion, in ~~that~~ order from a rear end portion to a top end portion of said screw; and further comprising:

an inert gas having, at least in pressure, a pressure equal to or greater than a supercritical pressure or an inert gas under a supercritical state is injected into a position corresponding to the low-pressure portion of said screw of said screw cylinder.